

U.S. Patent Application Serial No. 09/893,522
Amendment filed May 14, 2007
Reply to OA dated February 13, 2007

CLAIMS CURRENTLY PENDING

Listing of Claims:

1 Claim 1 (previously presented): A fluid control device wherein
2 a plurality of lines each comprise a plurality of fluid controllers arranged at an upper level
3 and a plurality of coupling members arranged at a lower level,

4 the plurality of lines being arranged in parallel on a base member and having inlets directed
5 in the same direction, with outlets thereof facing toward the same direction,

6 the fluid control device being characterized in that the base member has at least one
7 orthogonal rail extending in a direction orthogonal to the line and each line is mounted on a line
8 supporting rail,

9 the line supporting rail being mounted on the base member and slidable in a direction
10 orthogonal to the line along the at least one orthogonal rail.

1 Claim 2 (previously presented): A fluid control device wherein
2 a plurality of lines each comprise a plurality of fluid controllers arranged at an upper level
3 and a plurality of coupling members arranged at a lower level,
4 the plurality of lines being arranged in parallel on a base member and having inlets directed

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5 in the same direction, with outlets thereof facing toward the same direction,
6 the fluid control device being characterized in that each line is mounted on a line support
7 member,
8 the line support member being mounted on the base member and slidable in a direction
9 orthogonal to the line, wherein
10 the line support member is a line supporting rail removably mounted on the base member,
11 and
12 the coupling members are slidably mounted on the rail,
13 each of the fluid controllers being mounted on two of the coupling members.

1 Claim 3 (previously presented): A fluid control device wherein a plurality of lines each
2 comprise
3 a plurality of fluid controllers arranged at an upper level and a plurality of coupling members
4 arranged at a lower level,
5 the plurality of lines being arranged in parallel on a base member and having inlets directed
6 in the same direction, with outlets thereof facing toward the same direction,
7 the fluid control device being characterized in that the base member is provided with tracks
8 arranged in parallel and corresponding to the respective lines,
9 the tracks being slidable in a direction orthogonal to the lines,
10 the coupling members being slidably mounted on the corresponding track,

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11 each of the fluid controllers being mounted on two of the coupling members,
12 two of the coupling members are not directly connected to each other so that each coupling
13 member can be fixed at any position of the track independently, and
14 each coupling member has vertical internally threaded portions formed in the upper wall and
15 each of the fluid controllers is attached to two of the coupling members by driving screws
16 inserted through the controller into the internally threaded portion of the coupling member.

1 Claim 4 (previously presented): A fluid control device wherein a plurality of lines each

2 comprise

3 a plurality of fluid controllers arranged at an upper level and a plurality of coupling members
4 arranged at a lower level,

5 the plurality of lines being arranged in parallel on a base member and having inlets directed
6 in the same direction, with outlets thereof facing toward the same direction,

7 the fluid control device being characterized in that the base member is provided with tracks
8 arranged in parallel and corresponding to the respective lines,

9 the tracks being slidable in a direction orthogonal to the lines,

10 the coupling members being slidably mounted on the corresponding track,

11 each of the fluid controllers being mounted on two of the coupling members, wherein

12 slide members corresponding to the respective coupling members are provided on the track,

13 each of the slide members being connected to the corresponding coupling member,

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14 two of the coupling members are not directly connected to each other so that each coupling
15 member can be fixed at any position of the track independently, and
16 each coupling member has vertical internally threaded portions formed in the upper wall and
17 each of the fluid controllers is attached to two of the coupling members by driving screws
18 inserted through the controller into the internally threaded portion of the coupling member.

1 Claim 5 (withdrawn): A fluid control device according to claim 3 wherein
2 the base member is in the form of a plate, and each of the tracks is provided by a groove in
3 an upper surface of the base member.

1 Claim 6 (withdrawn): A fluid control device according to claim 5 wherein
2 a slide member having an internally threaded portion and provided in the groove is connected
3 to the coupling member by a screw member, and an edge portion defining an opening of the groove
4 is provided with a portion for preventing the slide member from slipping out of the groove upward.

Claims 7-34 (canceled).

1 Claim 35 (previously presented): A fluid control device according to claim 1, 2, 3 or 4
2 wherein
3 the base member is shaped in the form of a frame by an inlet-side rail, an outlet-side rail and

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4 connecting members interconnecting the side rails.

1 Claim 36 (previously presented): The fluid control device according to claim 1 or 2,
2 wherein the line supporting rail comprises two shape members each having a groove and being
3 arranged side by side, each of the shape members forms the groove between two inward flanges, the
4 groove has a downwardly tapered trapezoidal cross section, and a slide member having a
5 downwardly tapered trapezoidal cross section and a vertical internally threaded portion is provided
6 in the line support member and is connected to one of the coupling members by a screw member.

1 Claim 37 (previously presented): The fluid control device according to claim 1, 2, 3 or
2 4 wherein a plurality of lines comprise a spare line and only a line supporting rail is provided for the
3 spare line.

1 Claim 38 (previously presented): A fluid control device according to claim 1 or 2 wherein
2 the device is assembled by attaching each line supporting rail having coupling members and fluid
3 controllers mounted thereon to the base member.

1 Claim 39 (previously presented): A fluid control device according to claim 1 or 2 wherein
2 lines are modified by removing channel connecting means upward as required, then removing the
3 old line to be modified as mounted on the line supporting rail, slidingly moving the line supporting

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4 rails of the lines not to be modified when so required, mounting on the base member the line
5 supporting rail of the line to be substituted, further slidingly returning the line supporting rails of the
6 lines not to be modified to the proper position, and finally installing channel connecting means as
7 required for modification.

1 Claim 40 (previously presented): A fluid control device according to claim 1 or 2 wherein
2 lines are installed by removing channel connecting means upward as required, slidingly moving the
3 line supporting rails of the existing lines as required, mounting on the base member the line
4 supporting rail of the line to be added, further slidingly returning the line supporting rails of the
5 existing lines to the proper position, and finally installing channel connecting means as required for
6 addition.

1 Claim 41 (previously presented): The fluid control device according to claim 4, wherein
2 the slide member has an axial length smaller than end-to-end distance between the inward flanges
3 of each of the shape members.

1 Claim 42 (previously presented): A fluid control device according to claim 1, 2, 3, or 4
2 wherein
3 a clearance for inserting a tool therethrough for rotating the screw member is formed between
4 each adjacent pair of the fluid controllers.

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1 Claim 43 (previously presented): The fluid control device according to claim 3 or 4,
2 wherein each one of the tracks comprises two shape members each having a groove and being
3 arranged side by side, each of the shape members forms the groove between two inward flanges, the
4 groove has a downwardly tapered trapezoidal cross section, and a slide member having a
5 downwardly tapered trapezoidal cross section and a vertical internally threaded portion is provided
6 in the track and is connected to one of the coupling members by a screw member.

1 Claim 44 (previously presented): A fluid control device according to claim 1 or 2 wherein
2 the fluid controller can be replaced by one having a different length by removing the fluid controller
3 to be replaced, moving the coupling member along the line supporting rail to the required position,
4 fixing the coupling member to the line supporting rail, and mounting the substitute fluid controller
5 on the coupling members concerned.

1 Claim 45 (previously presented): A fluid control device according to claim 1 or 2 wherein
2 an additional fluid controller and an additional coupling member can be installed in the existing line
3 by removing a fluid controller adjacent to the additional fluid controller, moving the coupling
4 member adjacent to the additional coupling member along the line supporting rail to the required
5 position, fixing the additional coupling member to the line supporting rail, and mounting the
6 additional fluid controller on the coupling members concerned.

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1 Claims 46 (previously presented): A fluid control device according to claim 4 wherein
2 each of the tracks is provided by a line supporting rail removably mounted on the base
3 member.

1 Claim 47 (previously presented): A fluid control device according to claim 1, 2 or 46
2 wherein
3 the line supporting rail is U-shaped in cross section and has inward flanges, and a slide
4 member having an internally threaded portion and provided in the rail is connected to the coupling
5 member by a screw member.

1 Claim 48 (previously presented): A fluid control device according to claim 1, 2 or 46
2 wherein
3 the line supporting rails are connected to one another by a connecting member.

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